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ABSTRACT

Since its inception in 1984, the CADET (Computer-Assisted Distance Education Telecommunications), a micro to mainframe computer program developed by the University of Oklahoma but modified for use at the University of Alberta in Canada, has achieved major results. Its successful use in delivering a distance education graduate course in which both the student and teacher used the CADET system for questions, answers, and course content information has resulted in this course being offered to students anywhere in the world serviced by the Datapac system. Additionally, interest has been expressed in offering courses to teachers in the field using CADET for the subject areas of social studies, movement education, and mathematics education. It has also been incorporated as one of the distance education techniques for a proposed Masters of Education degree in Adult and Higher Education at the University of Alberta. A second phase of the project was the transformation of the program for digital analysis of Landsat satellite images on the Apple microcomputer from U.S. to Canadian format, which allows a user to download satellite map data via telephone from a mainframe computer to a microcomputer and manipulate the data with several analysis programs. Funding is being considered for use of this procedure by teachers in the fields of environment, geography, social studies, and science in the province of Alberta. (DJR)

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A Report To The

Program Planning and Development Branch,

Alberta Department of Advanced Education

Program Services Division

February 28, 1985

THE CADET PROJECT

COMPUTER ASSISTED DISTANCE EDUCATION TELECOMMUNICATION FOR POST SECONDARY EDUCATION IN ALBERTA

FINAL REPORT

This report is cumulative to CADET
Reports #1 of June 15, 1983, and #2 of June 18, 1984,
and Supplementary Report of October 16, 1984.

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Cadet Project Final Report

This report is a culminating one, based upon Report #1 of June 15, 1983, Report #2 of June 18, 1984, Supplementary Report of October 16, 1984, and the information published by the writers in the June, 1984 issue of Educational Technology magazine. It will deal with the field applications of the CADET developments.

The CADET micro to mainframe procedure has been successfully used in the fall term of 1984 to deliver a distance education course, Ed. Curriculum and Instruction 501, section X1, "Remote Sensing For Teachers: New Advances In Classroom Map Skills (A Computer Delivered Course)" (appendix A). It was designed as a hueristic model. One student in Red Deer who is a graduate student at the University of Calgary enrolled in the course, and was permitted by the University of Calgary to apply the course to his degree requirements. He successfully completed the course, having taken two examinations proctored by a school supervisor in his district, and writing a term paper. The examinations were done by mail, and the term paper was uploaded via CADET. Both student and teacher were in contact using the CADET system which was used to advantage for questions, answers, and course content information.

At one point, it was necessary for the instructor to be off campus for a prolonged period. During this time he was able to conduct the course from his home using his own micro-processor. The student expresssed satisfaction with the system and wished to continue interaction with the instructor beyond the period set for the course.

The course will again be offered this fall, and it will be opened to students anywhere in the world serviced by the Datapac system.

Because of the satisfactory results of the above course, professors in the Department of Elementary Education expressed interest in offering courses to teachers in the field using CADET for the subject areas of social studies, movement education, and mathmatics education. The courses could be either undergraduate or graduate courses. The Chairman of the Department noted that up to half of the courses taken toward a graduate diploma in Elementary Education could be by CADET. This would allow teachers in the field too distant to the University of Alberta to commute, to finish a graduate program in a shorter time period, and at a lower cost then at present. It would also allow them to take courses during the school year while they are regularly teaching, without any need for time off or substitutes to cover their classes, thus avoiding salary losses as well. However, this program cannot come on-stream until sufficient funds are available to pay for sessional instructors needed to release the professors from their regular schedules to teach the CADET courses.

The Faculty of Edcuation has shown interest in the CADET system, and it has been incorporated as one of the distance education techniques for the proposed Master of Education degree in Adult and Higher Education.

A second phase of the CADET system was the transformation of the program for digital analysis of Landsat satellite images on the Apple micro-computer from U.S. to Canadian format. This program, developed at the Unviersity of Oklahoma by Dr. John Harrington and associates, allows a user to download

satellite map data via telephone from a mainframe computer to a micro-computer. The user can then manipulate the data with several analysis programs, including creating a color map-like image on the screen. Until now, such techniques were available only in private industry, government special services, and specialized university departments with very expensive state of the art equipment. This new program allows Apple micro-processor users such as teachers and students in the fields of environment, geography, social studies, and science to use these techniques.

Becuase of the value of this procedure, the Apple Canada Educational Foundation provided Kirman with an equipment grant of computer, monitor, disk drives, printer, 80 column card and cables.

Kirman of this team also produced a slide tape of the Oklahoma Landsat program that was shown at the fall, 1984 annual meeting of the National Council For Geographic Education in Toronto, and made a presention at the fall 1984 annual meeting of the Alberta Society For Computers In Edcuation, in Edmonton, of the CADET modifcations of the Oklahoma program.

Alberta Environment has shown interest in the CADET modification of the Oklahoma Landsat program for the teachers of this province. In this regard, a special meeting has been called at the request of Alberta Environment to include members of the Alberta Teachers Association specialists' councils in social studies, science, environmental education, and computers, as well as the social studies and science supervisors of the Edmonton Public and Separate School Boards, a computer education specialist from the University of Alberta Faculty of Education, and representatives from the Alberta Remote Sensing Center, and

Alberta Environment.

At this meeting, Kirman will demonstrate the program and the above specialists will assess its value. A favorable assessment will result in Alberta Environment funding additional developments for classroom use. It should be noted that Dr. John Harrington has given permission for distribution of the CADET modified Oklahoma Landsat program to Alberta teachers with waiver of copyright.

Thus, it is the pleasure of the writers to state that the CADET system is now being used by the Faculty of Edcuation of the University of Alberta for the delivery of off campus courses, and the Landsat component is being considered by Alberta Environment for additonal funding for educational purposes.

APPENDIX A

UNIVERSITY OF ALBERTA

Department of Elementary Education

ED CI 501

Remote Sensing For Teachers:
New Advances In Classroom Map Skills
(A Computer Delivered Course)

Winter Session
Term I, 1984/85

Joseph M. Kirman, Ph.D.

COURSE OUTLINE

PREQUISITE: Consent of the instructor.

COURSE CONTENT:

This course is designed for both social studies and science teachers, as well as generalists interested in the area of map skills and technology.

The course will deal with overhead aerial images, infrared images, Landsat images, and other types of remotely sensed data. Classroom application of these images will be a major element. Computer interaction will be with the newly developed CADET system. All students will receive a sign-on and password for the University Amdahl mainframe computer.

Students will be expected to participate in weekly computer network conferencing--at their convenience, view audio-visual materials presented on the educational t.v. channel, prepare and implement a remote sensing project with their classes, and write one or more examinations proctored by a supervisor in their respective schools. Computer interaction will be with the newly developed CADET system.

There will be one on-campus orientation meeting.

TECHNICAL ELEMENTS FOR COURSE DELIVERY:

A) Participants must be within the University of Alberta's local telephone exchange.

B) The following equipment is required:

1. Apple computer (priority will be given to those students having an Apple equipped with lower case characters).
2. Telephone modem.
3. Visiterm communication software.
4. A text editor or word processing software program.
5. Printer.

At the first meeting, students must have with them their Visiterm program diskette to upgrade it to the Amdahl specifications option, and a blank diskette.

Students are expected to have a working knowledge of the Apple computer, and some familiarity with their word processing program. Instruction will be provided for using the Visiterm program.

TEXTBOOK:

Required

Harper, Dorothy. EYE IN THE SKY (2nd ed.). Montreal: Multiscience Publications Limited, in Association with Energy, Mines and Resources, 1983.

Optional

Kirman, Joseph. PRIMER FOR SATELLITE MAPS. Edmonton: Puckrin's Production House Ltd., 1978.

FEE:

$15.00, payable to the Department will be accepted at the first class meeting for mainframe computer use and printed materials.

PROJECT:

The project must be approved by the professor and deal with some aspect of classroom remote sensing instruction. The project will ordinarily be carried out with the pupils of the students in this course. Topics may relate to images, platforms, physics, applications, technological impact, or any other relevant element. A paper will be prepared describing the project.

EVALUATION:

Participation.....20
Mid Term Quiz.....25
Project.....25
Final Examination....30

Participation will be evaluated on the number of times computer communications are made--in particular the extent to which questions and comments are addressed to other members of the class. This is especially so regarding project discussions. The element of interaction is critical for the sharing of knowledge.

SCHEDULE OF CLASS ACTIVITIES:

(To be added.)

JMK/as
04/10/84